

SP Firestop Systems

Fire protection solution for curtain wall joints

As part of the comprehensive FirePro® range of fire protection products, ROCKWOOL SP Firestop Slab is a product specifically designed to form cavity fire stops within buildings.

It may be installed horizontally or vertically and is suitable for cavity widths between 50mm and 400mm in both masonry and curtain wall constructions.

For cavity widths of 250mm or more, joints between adjacent lengths of firestops should be sealed on the top surface with aluminium foil tape.

The product has been designed as a one-piece system and affords easy cutting and installation. It provides a unique lateral compression to facilitate tightness of fit.

The product is available in two versions:

SP60 Slab - 1 hour fire resistance.

SP120 Slab - 2 hours fire resistance.

Advantages

- Easy to cut and install
- Ensures site tolerances are accommodated
- Tested over 2 hours fire resistance
- Resists the passage of smoke
- Suitable for cavity widths up to 400mm
- Easy site storage and handling
- Quality assured to BS EN ISO 9001



ROCKWOOL SP Firestop Slabs at floor / external wall junction, International Patent Application PCT/GB98/01733.

Description

Shape and dimensions

ROCKWOOL SP60 Firestop Slab: 1000 x 650 x 75mm thick.

ROCKWOOL SP120 Firestop Slab: 1000 x 650 x 90mm thick.

The products are faced on both sides with reinforced aluminium foil to give Class 'O' rating and excellent smoke resistance.

Both slabs are designed to be cut on site to produce cavity fire stops of 1000mm length and in widths to suit individual cavity sizes, as shown in Figure A.

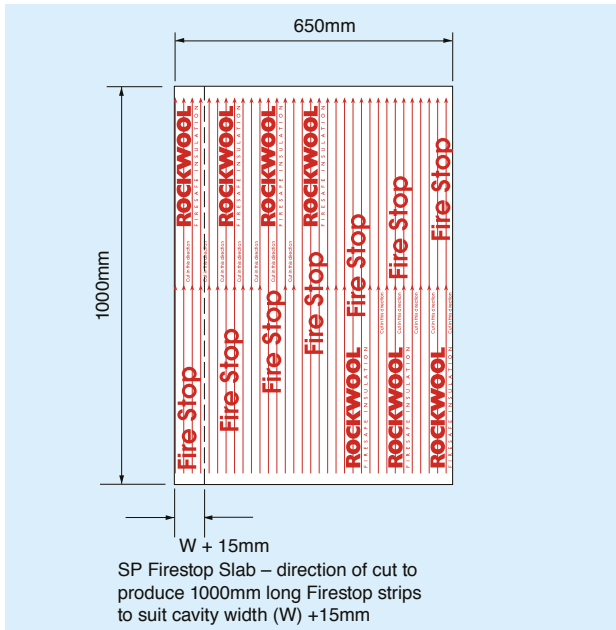


Figure A: Cutting method for ROCKWOOL SP Firestop Slab

Accessories

ROCKWOOL SP Fixing Brackets* are required for the installation (Figure B). They are supplied in two standard types, namely SP/S Fixing Bracket designed for cavities up to and including 100mm wide and SP/L Fixing Bracket for cavities over 100mm and up to 400mm wide.

Brackets are supplied in cardboard boxes, flat packed, and are designed to be easily re-profiled by hand on site. The SP Fixing Brackets should be cut on site as necessary to allow at least 75% penetration of the firestop.

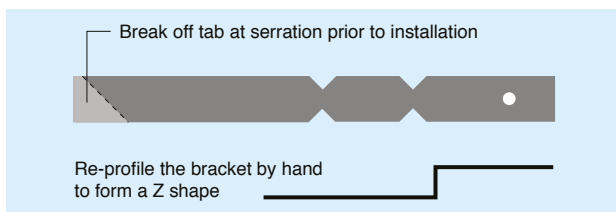


Figure B: ROCKWOOL SP Firestop Fixing Bracket

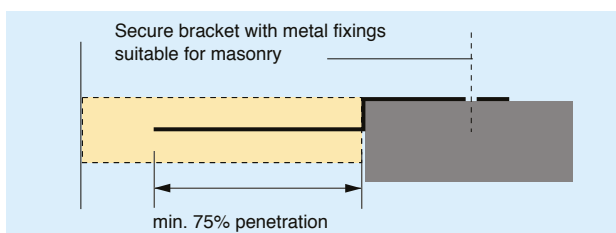


Figure C: Sectional view of ROCKWOOL SP Firestop Slab and Bracket

Standards and approvals

ROCKWOOL SP60 and SP120 Firestop Slabs have been tested and assessed in accordance with BS 476: Part 20: 1987 and have achieved 60 minutes and 120 minutes respectively for both integrity and insulation, as detailed in LPC assessment CC89697.

ROCKWOOL SP60 and SP120 Firestop Slabs comply with the provisions of Approved Document B3 of the 1991 Building Regulations (2002 Edition).

SP Firestop Systems are third party approved by the Loss Prevention Council Certification board (LPCB) for performance and quality and are listed in the "Red Book" - Certificate no. 022b. Certificates can be accessed online at www.redbooklive.com.

Performance

Non-combustibility

The base mineral wool of ROCKWOOL SP60 and SP120 Firestop Slabs are inherently fire safe and achieve Euro Class A1. ROCKWOOL products will withstand temperatures in excess of 1000°C without melting.

Acoustic

ROCKWOOL products have excellent acoustic properties and can appreciably reduce the levels of airborne sound transmission through wall and floor cavities.

Resistance to moisture

ROCKWOOL SP60 and SP120 Firestop Slabs are water repellent and unaffected by the freeze/thaw cycle.

Applications

Fire resistance between the edge of a concrete floor slab and curtain walling which is stable in fire.

ROCKWOOL SP60 and SP120 Firestop Slabs provide one and two hours fire resistance respectively in voids up to 400mm wide.

Note that curtain walling systems should be adequately restrained to the floor.

Figure D illustrates a typical arrangement, using SP Fixing Brackets at 500mm centres.

Masonry wall cavities

ROCKWOOL SP60 and SP120 Firestop Slabs provide 1 and 2 hours fire resistance respectively in masonry wall cavities up to 400mm wide. They can be used both horizontally and vertically.

Figure E illustrates typical applications, with the product fitted tightly between masonry leaves. When it is not possible to build the brackets into a leaf, the fixings can be re-profiled as necessary and mechanically fixed to the face of the masonry.

The installation of ROCKWOOL SP Firestop Slabs is the responsibility of the site contractor. Fixing sequence instructions are shown clearly on each pack as well as cutting guide lines on the surface of each slab.

External cladding

Where used in conjunction with profiled metal cladding, cut the ROCKWOOL SP Firestop Slab to suit the profile allowing 15mm for compression.

*Note:

In order to comply with the fire test certification, only ROCKWOOL SP Fixing Brackets should be used to install the product.

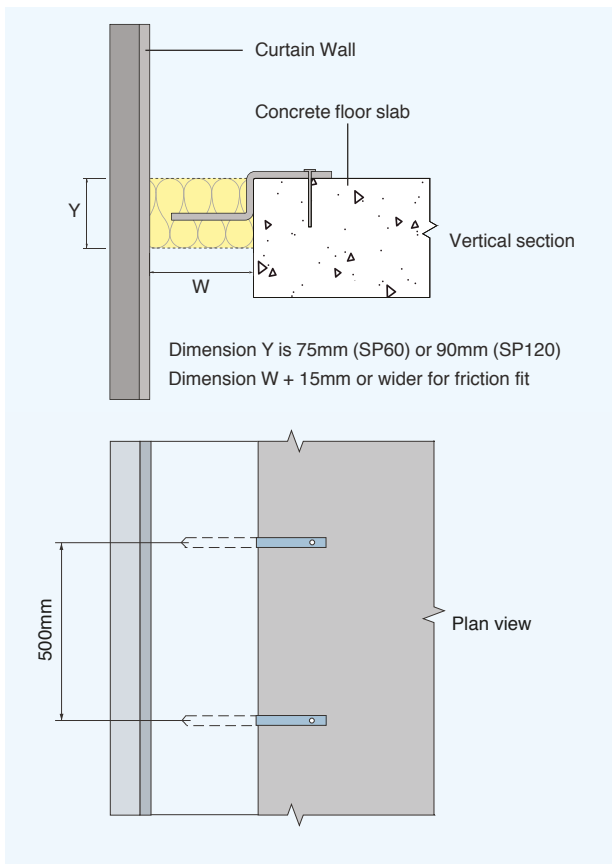


Figure D: ROCKWOOL SP Firestop Slab between floor and curtain wall

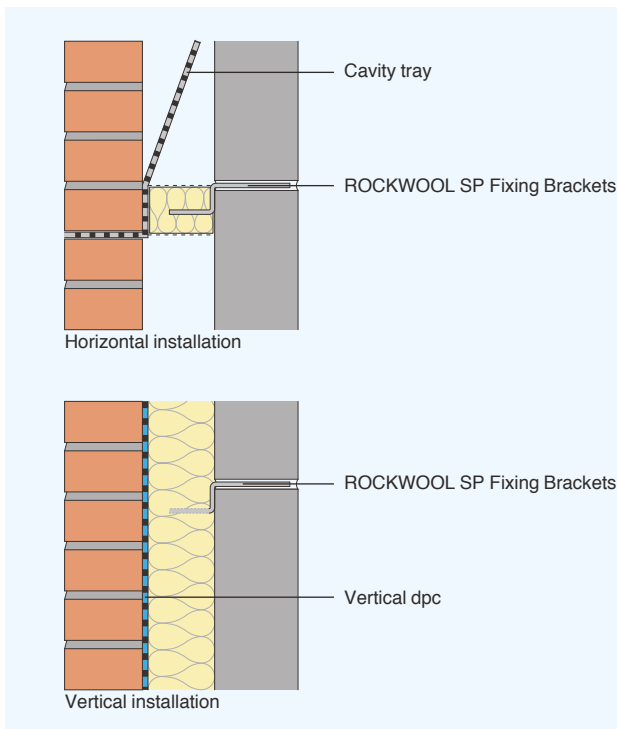


Figure E: ROCKWOOL SP Firestop Slab between masonry leaves

***NB**

For cavity widths of 250 mm or more, joints between adjacent lengths of firestops should be sealed on the top surface with aluminium foil tape.

Installation

General

ROCKWOOL SP Firestop Slabs are designed for cutting on site with a sharp knife or saw and a straight edge. The cavity to be firestopped should be measured and the ROCKWOOL SP Firestop Slab cut to suit this dimension, using one piece only per gap width – see Figures C, D and E.

For easy compression fitting and to accommodate the fixing pattern, cutting should be along the 1000mm width as indicated in Figure A.

The SP Fixing Brackets are then re-profiled by hand and cut as necessary to allow at least 75% penetration of the fire stop material. They should be placed as shown in the diagrams, or fixed by other suitable mechanical means.

Curtain walling

The fixing sequence is as follows:

- 1 Cut the ROCKWOOL SP Firestop Slab allowing an additional 15mm or wider for compression when fitted.
- 2 The ROCKWOOL SP60 or SP120 is impaled onto the SP Fixing Brackets at the rate of 2 per length or fixed at a maximum of 500mm \pm 10mm centres, as shown in Figure D. The SP Fixing Brackets should be placed at a maximum of 250mm \pm 10mm in from each end of the ROCKWOOL SP Firestop Slab.
- 3 The product should then be fitted securely into the void, and tightly butted to the adjacent ROCKWOOL SP Firestop Slab.
- 4 Once the ROCKWOOL SP Firestop Slab has been accurately fitted, the SP Fixing Brackets must then be mechanically fixed to the edge of the floor slab with metal fixings suitable for masonry.
- 5 For cavity widths of 250mm or more, joints between adjacent lengths of firestops should be sealed on the top surface with aluminium foil tape.

Masonry wall cavities

The fixing sequence is as follows:

- 1 Cut the ROCKWOOL SP Firestop Slab to suit cavity size, ensuring a tight fit.
- 2 The ROCKWOOL SP60 or SP120 is impaled onto the SP Fixing Brackets at the rate of 2 per length or fixed at a maximum of 500mm \pm 10mm centres. After suitably re-profiling the SP Fixing Brackets, they can be built into the bed joints of the internal leaf. Alternatively, the SP Fixing Brackets may be re-profiled by hand into an 'L' shape and mechanically fixed to the face of the inner leaf with metal fixings suitable for masonry.
- 3 Work on both leaves can then be continued and must include either a vertical damp proof course or a cavity tray, installed over the ROCKWOOL SP Firestop Slab as shown in Figure E.
- 4 For cavity widths of 250mm or more, joints between adjacent lengths of firestops should be sealed on the top surface with aluminium foil tape.

Site use

Storage and handling

ROCKWOOL SP Firestop Slabs are light and easy to handle. They are supplied compression wrapped in polyethylene, which will provide short term protection. For long term storage they must be protected by a waterproof covering.

Estimating quantities

The chart below indicates the usage of ROCKWOOL SP Firestop Slabs and fixings, assuming accurate site cutting practices.

Slab size: 1000 x 650mm

Cavity width (mm)	Linear metres per slab (m)	Linear metres per pack (m)	No of fixings required per pack
50 + 15	10	40	80
55 + 15	9	36	72
60 + 15	8	32	64
65 + 15	8	32	64
70-75 + 15	7	28	56
80-85 + 15	6	24	48
90-105 + 15	5	20	40
110-125 + 15	4	16	32
130-155 + 15	3	12	24
160-210 + 15	2	8	16
215-320 + 15	1	4	8
325-400 + 15	1	4	8

Specifications

Curtain walling

The cavity fire stop between the edge of the concrete floor slab and curtain walling is to be ROCKWOOL SP60 or SP120 Firestop Slab to provide 1 hour or 2 hour fire resistance for both integrity and insulation criteria (LPC assessment CC89697). Fixings are to be ROCKWOOL SP/S or SP/L Fixing Brackets, fixed in accordance with the details given in the this data sheet.

Slabs should be cut to suit the width of the as-built cavity, allowing an additional 15mm for compression, and securely fitted into the void. All joints are to be tightly butted. (Please see *Curtain Walling and External Cladding Systems).

Masonry wall cavity

The cavity barrier is to be ROCKWOOL SP60 or SP120 Firestop Slab to provide 1 hour or 2 hour fire resistance for both integrity and insulation criteria (LPC assessment CC89697). Fixings are to be ROCKWOOL SP/S or SP/L Fixing Brackets, fixed in accordance with the details given in this data sheet.

A damp proof membrane or cavity tray is to be installed during the construction of the outer leaf. Slabs should be cut to suit the width of the as-built cavity and securely fitted. All joints are to be tightly butted.

*Curtain walling and external cladding systems

ROCKWOOL SP FireStop Slabs will provide fire stopping in conjunction with a stable, external façade system. If, during a fire, the behaviour of the façade panel or its fixing is such that a gap develops between the ROCKWOOL SP Firestop Slab and the panel allowing fire to pass through, Wilhams Insulation Far East Sdn Bhd cannot accept liability for failure. Specifiers should ensure that the choice of the curtain walling components will not diminish the fire-stopping requirements.

Curtain walling systems are manufactured from a wide range of materials which react differently in fire. Large scale independent UK investigations have shown that some glazed or aluminium external cladding systems are liable to integrity failure under fire attack within short periods of time, 5 and 20 minutes respectively.

Steel faced composite panels filled with combustible insulation can be unstable under fire attack. Curtain walling systems incorporating fire-sensitive panels may suffer severe movement and buckling, resulting in gaps forming between the panel and the ROCKWOOL SP Firestop Slab.

Health and safety

Current HSE 'CHIP' Regulations and EU directive 97/69/EC confirm the safety of ROCKWOOL mineral wool; Rockwool fibres are not classified as a possible human carcinogen. The maximum exposure limit for mineral wool is 5mg/m³, 8 hour time-weighted average. A Material Safety Data Sheet is available from Wilhams Insulation Far East Sdn Bhd to assist in the preparation of risk assessments.

FirePro® is the registered trademark of Wilhams Insulation Far East Sdn Bhd



Wilhams Insulation Far East Sdn Bhd

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